1.(b) $I(x,y) = N(x \, t \, N(y))$

$= 1 - [x \, t \, (1-y)]$

$= 1 - [0 \vee (x + 1 - y - 1)]$

$= 1 - [0 \vee (x - y)]$

$= 1 + [0 \wedge (-x + y)]$

$= 1 \wedge (1 - x + y)$

$= 1 \wedge [N(x) + y] = N(x) \, s \, y$

Pode também aplicar De Morgan para $\vee$ e $\wedge$.

(c) $x \Rightarrow_R y = \bigvee \{z \in [0,1] : x \, t \, z \leq y\}$

$= \bigvee \{z \in [0,1] : 0 \vee (x + z - 1) \leq y\}$

$= \bigvee \{z \in [0,1] : 0 \leq y \text{ e } x + z - 1 \leq y\}$

$= \bigvee \{z \in [0,1] : x + z - 1 \leq y\}$.

$$= \begin{cases} 1 & \text{se } x \leq y \\ 1 - x + y & \text{se } x > y \ (\Leftrightarrow y - x < 0) \end{cases}$$

$$= \begin{cases} 1 & \text{se } 1 - x + y \geq 1 \\ 1 - x + y & \text{se } 1 - x + y < 1 \end{cases}$$

$= 1 \wedge (1 - x + y) = N(x) \, s \, y = I(x,y)$

onde $N(x) = 1 - x$ e $x \, s \, y = 1 \wedge (x + y)$ $\forall x, y \in [0,1]$